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Terms	Documents
11 and ((self-assembled monolayer) same (dna or probe) same (conductive))	0

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L1: Entry 1 of 14

File: USPT

Jan 11, 2000

US-PAT-NO: 6013170

DOCUMENT-IDENTIFIER: US 6013170 A

TITLE: Detection of analytes using reorganization energy

DATE-ISSUED: January 11, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meade; Thomas J.	Altadena	CA	N/A	N/A

US-CL-CURRENT: 205/777.5; 204/403, 204/415, 204/418, 205/778, 205/793.5, 435/4,  
435/5, 435/6, 435/7.1, 435/7.71, 435/7.72, 435/7.8, 435/7.9, 435/7.91, 435/7.93

## ABSTRACT:

The invention relates to novel methods and compositions for the detection of analytes using the nuclear reorganization energy,  $\lambda$ , of an electron transfer process.

64 Claims, 0 Drawing figures Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMIC	Draw Desc	Image
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☐ 2. Document ID: US 6013459 A

L1: Entry 2 of 14

File: USPT

Jan 11, 2000

US-PAT-NO: 6013459  
DOCUMENT-IDENTIFIER: US 6013459 A

TITLE: Detection of analytes using reorganization energy

DATE-ISSUED: January 11, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meade; Thomas J.	Altadena	CA	N/A	N/A

US-CL-CURRENT: 435/7.1; 205/777.5, 205/778, 205/793.5, 435/4, 435/5, 435/6,  
435/7.2, 435/7.3, 435/7.4, 435/7.6, 435/7.71, 435/7.72, 435/7.8, 435/7.9,  
435/7.91, 435/7.93

ABSTRACT:

The invention relates to novel methods and compositions for the detection of analytes using the nuclear reorganization energy,  $\lambda$ , of an electron transfer process.

47 Claims, 0 Drawing figures Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 3. Document ID: US 6002817 A

L1: Entry 3 of 14

File: USPT

Dec 14, 1999

US-PAT-NO: 6002817  
DOCUMENT-IDENTIFIER: US 6002817 A

TITLE: Optical sensors for the detection of nitric oxide

DATE-ISSUED: December 14, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kopelman; Raoul	Ann Arbor	MI	N/A	N/A
Clark; Heather	Ypsilanti	MI	N/A	N/A
Barker; Susan	Ann Arbor	MI	N/A	N/A

US-CL-CURRENT: 385/12; 385/127, 385/128, 385/38, 385/43

ABSTRACT:

Optical fiber sensors and fiberless optical sensors for measuring analytes, and in particular nitric oxide, are described utilizing metals, and more particularly, metal colloids. Proteins (or fragments thereof) with selective binding are immobilized on metal particles. The proteins may be dye-labeled for increased sensitivity.

33 Claims, 7 Drawing figures Exemplary Claim Number: 1  
Number of Drawing Sheets: 7

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 4. Document ID: US 6001587 A

L1: Entry 4 of 14

File: USPT

Dec 14, 1999

US-PAT-NO: 6001587

DOCUMENT-IDENTIFIER: US 6001587 A

TITLE: Chemically specific patterning on solid surfaces using surface immobilized enzymes

DATE-ISSUED: December 14, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Turner; David C.	Waldorf	MD	N/A	N/A
Gaber; Bruce P.	Bethesda	MD	N/A	N/A

US-CL-CURRENT: 435/41; 435/174, 435/176, 435/177, 435/180

## ABSTRACT:

An immobilized substrate surface is chemically modified by manipulating an nzyme which is immobilized to a solid surface. Modifications include (1) chemical dissection of a substrate surface such as by chemical hydrolysis, (2) chemical synthesis on a substrate surface, and (3) chemical patterning of a substrate surface. The enzyme may be coupled to colloidal beads or particles, locally flat solid surfaces including planar, textured planar, cylindrical and spherical surfaces or arbitrary predefined shapes, or scanning probe microscope probes. In the patterning applications, colloidal particles containing the enzyme can be confined to desired regions of the substrate surface by various techniques which control the movement of the particles. The particles can be confined to tunnels or channels in a patterned polymer mold on top of the substrate surface. The enzyme can also be immobilized onto the surface of a raised pattern and this patterned surface can then be placed in contact with the immobilized substrate.

18 Claims, 4 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 5. Document ID: US 5989835 A

L1: Entry 5 of 14

File: USPT

Nov 23, 1999

US-PAT-NO: 5989835  
DOCUMENT-IDENTIFIER: US 5989835 A

TITLE: System for cell-based screening

DATE-ISSUED: November 23, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dunlay; R. Terry	Pittsburgh	PA	N/A	N/A
Taylor; D. Lansing	Pittsburgh	PA	N/A	N/A

US-CL-CURRENT: 435/7.2; 435/288.3, 435/288.4, 435/29, 435/40.5, 435/40.51,  
435/7.21, 436/172, 436/546, 436/800, 436/809

ABSTRACT:

The invention relates to an optical system for determining the distribution, environment, or activity of fluorescently labeled reporter molecules in cells for the purpose of screening large numbers of compounds for specific biological activity. The invention involves providing cells containing fluorescent reporter molecules in an array of locations and scanning numerous cells in each location with a fluorescent microscope, converting the optical information into digital data, and utilizing the digital data to determine the distribution, environment or activity of the fluorescently labeled reporter molecules in the cells. The array of locations may be an industry standard 96 well or 384 well microtiter plate or a microplate which is a microplate having a cells in a micropatterned array of locations. The invention includes apparatus and computerized method for processing, displaying and storing the data.

8 Claims, 10 Drawing figures Exemplary Claim Number: 1  
Number of Drawing Sheets: 10

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 6. Document ID: US 5952172 A

L1: Entry 6 of 14

File: USPT

Sep 14, 1999

US-PAT-NO: 5952172

DOCUMENT-IDENTIFIER: US 5952172 A

TITLE: Nucleic acid mediated electron transfer

DATE-ISSUED: September 14, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meade; Thomas J.	Altadena	CA	N/A	N/A
Kayyem; Jon Faiz	Pasadena	CA	N/A	N/A
Fraser; Scott E.	La Canada	CA	N/A	N/A

US-CL-CURRENT: 435/6; 536/24.3, 536/24.31, 536/24.32

## ABSTRACT:

The present invention provides for the selective covalent modification of nucleic acids with redox active moieties such as transition metal complexes. Electron donor and electron acceptor moieties are covalently bound to the ribose-phosphate backbone of a nucleic acid at predetermined positions. The resulting complexes represent a series of new derivatives that are bimolecular templates capable of transferring electrons over very large distances at extremely fast rates. These complexes possess unique structural features which enable the use of an entirely new class of bioconductors and photoactive probes.

11 Claims, 27 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 7. Document ID: US 5942397 A

L1: Entry 7 of 14

File: USPT

Aug 24, 1999

US-PAT-NO: 5942397

DOCUMENT-IDENTIFIER: US 5942397 A

TITLE: Surface immobilization of biopolymers

DATE-ISSUED: August 24, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tarlov; Michael J.	Gaithersburg	MD	20899-000	N/A
Herne; Tonya M.	Gaithersburg	MD	1	N/A
McKenney; Keith H.	Gaithersburg	MD	20899-000	N/A

US-CL-CURRENT: 435/6; 536/24.1

## ABSTRACT:

In one embodiment, the present invention provides a biopolymer-containing monolayer comprising: thiol-derivatized biopolymers and organic thiols bound to a metal substrate. In another embodiment, the present invention provides a method for forming this biopolymer-containing monolayer. Preferably, the biopolymers are single-stranded DNA probes.

22 Claims, 7 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 8. Document ID: US 5922214 A

L1: Entry 8 of 14

File: USPT

Jul 13, 1999

US-PAT-NO: 5922214  
DOCUMENT-IDENTIFIER: US 5922214 A

TITLE: Nanometer scale fabrication method to produce thin film nanostructures

DATE-ISSUED: July 13, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Gang-yu	Detroit	MI	N/A	N/A
Xu; Song	Windsor	N/A	N/A	CAX

US-CL-CURRENT: 216/2; 355/71, 430/5

ABSTRACT:

A method for fabricating thin film nanostructures is provided. A layer of material on a substrate is mechanically displaced using an atomic force microscopy tip. The displacement is carried out in a fluid containing molecules which rapidly enter the void created by the AFM tip and bind to the clean substrate surface. These molecules are spatially confined in the void created by the displacement and form inlaid structures within the surrounding material. The surrounding material can be removed to create islands of the new material. The method is particularly adapted for use in fabricating nanometer-scale microelectronic devices.

18 Claims, 13 Drawing figures Exemplary Claim Number: 1  
Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 9. Document ID: US 5919626 A

L1: Entry 9 of 14

File: USPT

Jul 6, 1999



US-PAT-NO: 5919626  
DOCUMENT-IDENTIFIER: US 5919626 A

TITLE: Attachment of unmodified nucleic acids to silanized solid phase surfaces

DATE-ISSUED: July 6, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shi; Jufang	Baltimore	MD	N/A	N/A
Boyce-Jacino; Michael T.	Finksburg	MD	N/A	N/A

US-CL-CURRENT: 435/6; 435/287.2, 435/91.1, 436/94, 536/23.1, 536/24.3, 536/25.3

ABSTRACT:

The invention relates to a simple, cost effective method for immobilizing synthetic nucleic acid molecules onto a solid support. The invention further concerns the use of such immobilized molecules in nucleic acid hybridization assays, sequencing by hybridization assays, and genetic analyses and combinatorial analyses involving nucleic acids or proteins for screening applications.

29 Claims, 0 Drawing figures Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 10. Document ID: US 5824473 A

L1: Entry 10 of 14

File: USPT

Oct 20, 1998

US-PAT-NO: 5824473

DOCUMENT-IDENTIFIER: US 5824473 A

TITLE: Nucleic acid mediated electron transfer

DATE-ISSUED: October 20, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meade; Thomas J.	Altadena	CA	N/A	N/A
Kayyem; Jon Faiz	Pasadena	CA	N/A	N/A
Fraser; Scott E.	Newport Beach	CA	N/A	N/A

US-CL-CURRENT: 435/6; 435/5, 435/91.2, 536/23.1, 536/24.3, 536/24.33, 536/26.6

## ABSTRACT:

The present invention provides for the selective covalent modification of nucleic acids with redox active moieties such as transition metal complexes. Electron donor and electron acceptor moieties are covalently bound to the ribose-phosphate backbone of a nucleic acid at predetermined positions. The resulting complexes represent a series of new derivatives that are bimolecular templates capable of transferring electrons over very large distances at extremely fast rates. These complexes possess unique structural features which enable the use of an entirely new class of bioconductors and photoactive probes.

22 Claims, 35 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 7

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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(self-assembled monolayer) same (dna or probe)	14

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L1: Entry 11 of 14

File: USPT

Jul 7, 1998

US-PAT-NO: 5776674

DOCUMENT-IDENTIFIER: US 5776674 A

TITLE: Chemical biochemical and biological processing in thin films

DATE-ISSUED: July 7, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ulmer; Kevin M.	Cohasset	MA	N/A	N/A

US-CL-CURRENT: 435/6; 356/364, 435/5, 435/7.1, 435/7.2, 435/7.9, 435/91.1,  
436/172, 436/518, 436/527, 436/543, 436/547, 530/333, 530/334, 530/388.1,  
536/24.3, 536/24.32, 536/24.33

## ABSTRACT:

An optical trap is used to translate a particle through a thin film coating on an optically-flat surface. Preferably, the thin film coating is heterogeneous and the optical trap is used to move the particle through a succession of different regions of the thin film coating where different chemical, biochemical and/or biological processes take place. Examples of chemical, biochemical and/or biological processes that might be implemented in accordance with the invention include the following: oligonucleotide synthesis and sequencing, peptide synthesis and sequencing, carbohydrate synthesis and sequencing, combinatorial library synthesis and screening, conventional (i.e., Sanger or Maxam-Gilbert) DNA sequencing, or single-molecule DNA sequencing. In one embodiment of the invention, reaction products are left behind as the particle is moved through the thin film coating. Advantageously, these products can be identified by suitable means.

18 Claims, 18 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 9

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 12. Document ID: US 5770369 A

L1: Entry 12 of 14

File: USPT

Jun 23, 1998

US-PAT-NO: 5770369

DOCUMENT-IDENTIFIER: US 5770369 A

TITLE: Nucleic acid mediated electron transfer

DATE-ISSUED: June 23, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meade; Thomas J.	Altadena	CA	N/A	N/A
Kayyem; Jon Faiz	Pasadena	CA	N/A	N/A
Fraser; Scott E.	Newport Beach	CA	N/A	N/A

US-CL-CURRENT: 435/6; 435/287.2, 435/5, 435/91.1, 435/91.2, 536/23.1, 536/24.3, 536/24.33, 536/25.3, 536/26.6

## ABSTRACT:

The present invention provides for the selective covalent modification of nucleic acids with redox active moieties such as transition metal complexes. Electron donor and electron acceptor moieties are covalently bound to the ribose-phosphate backbone of a nucleic acid at predetermined positions. The resulting complexes represent a series of new derivatives that are bimolecular templates capable of transferring electrons over very large distances at extremely fast rates. These complexes possess unique structural features which enable the use of an entirely new class of bioconductors and photoactive probes.

27 Claims, 20 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 13. Document ID: US 5705348 A

L1: Entry 13 of 14

File: USPT

Jan 6, 1998

US-PAT-NO: 5705348  
DOCUMENT-IDENTIFIER: US 5705348 A

TITLE: Nucleic acid mediated electron transfer

DATE-ISSUED: January 6, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meade; Thomas J.	Altadena	CA	N/A	N/A
Kayyem; Jon Faiz	Pasadena	CA	N/A	N/A
Fraser; Scott E.	Newport Beach	CA	N/A	N/A

US-CL-CURRENT: 435/6; 435/5, 435/91.1, 435/91.2, 536/23.1, 536/24.3, 536/24.32, 536/24.33

ABSTRACT:

The present invention provides for the selective covalent modification of nucleic acids with redox active moieties such as transition metal complexes. Electron donor and electron acceptor moieties are covalently bound to the ribose-phosphate backbone of a nucleic acid at predetermined positions. The resulting complexes represent a series of new derivatives that are bimolecular templates capable of transferring electrons over very large distances at extremely fast rates. These complexes possess unique structural features which enable the use of an entirely new class of bioconductors and photoactive probes.

30 Claims, 30 Drawing figures Exemplary Claim Number: 1  
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 14. Document ID: US 5620850 A

L1: Entry 14 of 14

File: USPT

Apr 15, 1997

US-PAT-NO: 5620850  
DOCUMENT-IDENTIFIER: US 5620850 A

TITLE: Molecular recognition at surfaces derivatized with self-assembled monolayers

DATE-ISSUED: April 15, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bamdad; Cynthia C.	Sharon	MA	N/A	N/A
Sigal; George B.	Arlington	MA	N/A	N/A
Strominger; Jack L.	Lexington	MA	N/A	N/A
Whitesides; George M.	Newton	MA	N/A	N/A

US-CL-CURRENT: 530/300; 422/69, 435/4, 435/6, 435/7.1, 435/7.2, 435/7.9, 530/345, 530/388.1, 530/400, 534/15, 534/16

ABSTRACT:

An article suitable for use as a biosensor includes a species of a formula X--R--Ch adhered to a surface of the article as part of a self-assembled monolayer. X is a functionality that adheres to the surface, R is a spacer moiety, and Ch is a chelating agent. A metal ion can be coordinated by the chelating agent, and a polyamino acid-tagged biological binding partner of a target biological molecule coordinated to the metal ion. A method of the invention involves bringing the article into contact with a medium containing or suspected of containing the target biological molecule and allowing the biological molecule to biologically bind to the binding partner. The article is useful particularly as a surface plasmon resonance chip.

28 Claims, 4 Drawing figures Exemplary Claim Number: 1  
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KNIC	Draw Desc	Image
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(self-assembled monolayer) same (dna or probe)	14

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